LAND DISPOSAL RESTRICTION NOTIFICATION

_____ hereby notifies

_____ that the waste described in
Manifest Number_____ contains F001 F002 F003, F005
(circle codes) spent solvents listed below. These wastes are subject to the land disposal prohibition with prior treatment to standards contained in 40CFR Part 268.

F001-F005 Spent Solvents	Waste Contains	40CFR Part 268 Subpart D Treatment Standard mg/liter CCWE
acetone	____	0.59
N-butyl alcohol	____	5.00
ethyl acetate	____	0.75
isobutanol	____	5.00
methanol	____	0.75
methylene chloride	____	0.96
methyl ethyl ketone	____	0.75
methyl isobutyl ketone	____	0.33
tetrachloroethylene	____	0.05
toluene	____	0.33
1,1,1-trichloroethane	____	0.41
1,1,2-trichloro, 1,2,2-trifluoroethane	____	0.96
trichloroethylene	____	0.091
trichlorofluoromethane	____	0.96
xylene	____	0.15

C-2 American Chemical Service receives spent solvents, paints and by-product streams which are the feedstocks for its solvent reclamation and injectant blending operations. Preshipment samples of potential streams are obtained. Various parameters that might affect our manufacturing processes are measured. From this data a determination is made as to the suitability of the raw material in our process and its effect on our product. For routine shipments a quick reliable method is available to check the quality of the material versus the preshipment sample.

Based on our previous discussions the Waste Analysis Plan takes the following form:

A. Definition of waste quality and treatability

1. Parameters
2. Test methods
3. Rationale

B. Determination of prospective waste streams for quality and treatability (Generator Survey Form attached)

1. Generator audit
2. Data supplied by generator
3. Preshipment sample analysis
4. Generator certification

C. Determination of shipment quality

1. Documentation of incoming waste - Manifest and Land Disposal Restriction Notification
2. Sampling techniques
3. Guidelines for fingerprint analysis
4. Final disposition of shipment
5. Documentation of outgoing waste - Manifest and Land Disposal Restriction Notification

(1) PARAMETER	(2) TEST METHOD	(3) RATIONALE
T 1 Energy Value	ASTM D240	In order to produce a specification blast furnace injectant the heat of combustion must be controlled from 10500 - 14000 BTU per pound. The average composition of waste streams must be in this range, with no single stream less than 5000 BTU per pound.
T 2 Chloride	ASTM D4208 ASTM D808	In order to produce a specification blast furnace injectant the chloride content must be controlled within certain limits. These limits are a function of blast furnace operation and may vary.
T 3 Specific Gravity	ASTM D1298	Specific gravity is a rough measure of the percent chlorinated solvent contained in F001, and F002 waste. The value is useful for predicting distillation yields. It is useful for fingerprinting incoming streams.
T 4 Flash Point	ASTM D93	The flash point is run to determine if the material exhibits the characteristic of ignitability. It is also used for the proper shipping classification. A distille solvent's quality is a function of the incoming flash point.
T 5 Distillation Range	ASTM D86	The test gives the boiling range of the solvent fractions, yield of the volatile recoverable solvent, and a rough measure of the evaporation rate of the distillate. Based on the test data the waste is utilize as injectant blending stock or crude solven for distillation.
T 6 Viscosity	American Chemical Test *	The test is used to ensure that the materia is readily pumpable during unloading and processing.
T 7 Solids	American Chemical Test *	The test determines the nonvolatile portion of the waste. Based on the test data the waste is utilized as injectant blending stock or crude solvent for distillation.
T 8 PH	Similar to #9040 (SW 846)	This test is used to screen out material having a PH less than 5 or greater than 9. Since the equipment in the plant is constructed of carbon steel, a PH outside of this range will result in excessive wear.

* See page C-238 for test explanation.

(1) PARAMETER	(2) TEST METHOD	(3) RATIONALE
T 9	Similar to #8010,8020 (SW 846)	Types of solvent streams can be characteriz by measuring levels of certain organic constituents. In the area of redistilled solvents, thinners require certain levels o ketones, esters, aromatics, etc. Single component solvent crudes (i.e. toluene, acetone, perchlor, trichlor, methylene chloride, etc.) can be checked for volatile impurities.
T 10 Reactivity and Blendability (Compat.)	American Chemical Test *	This test in no way relates to the "Characteristic of Reactivity or Incompatibility" as defined in the regulations. It is a test that measures the waste's treatability Injectant feed stocks must be blended in such a way that they do not produce large particles or insoluble sludges. Slight temperature rises during blending may indicate the formation of insoluble polymers that might cause handling and filtration problems.
T 11 Acid Solubility	American Chemical Test *	This test is a measure of the oxygenated fraction of the distilled solvent. Percent oxygenate is related to the solvency and possible end-use applications of the distillate (i.e. cleaning solvent, paint reducer, etc.).

* See page C-238 for test explanation.

C-2b

T 1 ASTM D240

T 2 ASTM D4208, ASTM D808

T 3 ASTM D1298

T 4 ASTM D93

T 5 ASTM D86

T 8 #9040 (SW 846)

T 9 #8010, 8020 (SW 846)

A.C.S. TEST METHODS EXPLANATION IND 016 360 265

T 6 This is a visual observation to ascertain the apparent viscosity of the waste. A representative sample of materials is obtained via COLIWASA (SW 846). The sample is placed in a pint jar and inspected for viscosity. Based on experience we have learned how to visually evaluate viscosity as it relates to pumpability.

T 7 Solids

This is a comparative test to determine the non-volatile portion of liquid material. A representative sample of material is obtained via COLIWASA (SW 846). 2-3 grams of sample is weighed to ± 0.0005 grams, into an aluminum evaporating dish 6cm. across with a 2cm. rim. The dish is then placed in a hood approximately 6-7cm. below infrared heating lamp. The sample is then heated for 15 minutes, to a temperature of approximately 300°F. . The dish is allowed to cool and reweighed to determine the percent of nonvolatile material.

T 10 Reactivity and Blendability (Compat.)

A representative sample of the incoming waste and the inventoried material that is to be used for blending are obtained. The material to be checked is slowly poured into the waste in inventory and stirred with a thermometer. The relative volumes of the components approximate the actual blend volume. The final sample volume is approximately one pint. Any temperature rise, phase separation, flocculation, precipitation, gelation, solidification, or viscosity increase is noted. If these conditions are observed, the waste material may be tested for blendability with other stored materials.

T 11 Acid Solubility

A representative sample of the waste is obtained and distilled as per T 5 Distillation. The distillate is collected and the yield is noted. Ten mls of this distillate is placed in a 25 ml graduated cylinder. Fifteen mils of 80% H_2SO_4 is carefully added, gently mixed and the acid or aqueous layer is allowed to settle. The persent of distillate that is soluble in the acid is noted and recorded.

C 1. Documentation of incoming waste

Waste shipment manifest are inspected for accuracy and complete information. F-listed wastes must include Land Disposal Restriction Notification.

2. Sampling techniques

Each waste receipt is samples by COLIWASA (SW 846). For drum receipts of D001, F003, F005 wastes, a composite sample is made up by sampling each drum. For F001, F002, receipts each drum is sampled and analyzed. Each bulk shipment is sampled COLIWASA (SW 846).

3. Guide lines for fingerprint analysis

Whenever a shipment is received, one or more of the parameters is measured for a fingerprint analysis to provide rapid and reliable evidence that the waste received is the same as the waste expected (within normal tolerance levels). Parameters are chosen based on the specific treatment intended.

For injectant blending T1, T2, or T6 is used.

For solvent reclamation T3, T5, T6, or T11 is used.

A complete analysis using the parameters in the initial analysis is repeated: once per year for frequent receipts (more than 4 receipts per year), once each receipt for infrequent receipts (less than 4 receipts per year), and once the generator informs ACS of a change in the waste stream.

4. Final disposition of shipment

The disposition is based on the results of the fingerprint analysis and is one of the following: reclamation crude, injectant feed stock, or rejection and return to the customer.

5. Documentation of outgoing waste

Land Disposal Restriction Notification accompanies each manifest for shipments containing F listed wastes as noted on each incoming waste's manifest.

AMERICAN CHEMICAL SERVICE

HAZARDOUS WASTE ANALYSIS

DATE _____

MANIFEST # _____

Company Name _____

Address _____

EPA ID # _____

Waste Description _____

EPA Hazardous Waste No. _____

T-1	BTU/LB	_____	RR
T-2	% Chloride	_____	5%
T-3	Sp. Gravity	_____	10
T-4	Flash Point	_____	20
T-5	Distillation Range	_____	30
	% Yield	_____	40
T-6	Viscosity	_____	50
T-7	Solids	_____	60
T-8	pH	_____	70
T-9	Select Organics	_____	80
T-10	Compatability	_____	90
T-11	Acid Solubility	_____	95
			Dry
			ASTM
			YIELD

Disposition _____ Supervisor _____

Comments: Laboratory _____

_____

_____

_____

_____

C-2e (con't) This is the procedure followed for accepting all offsite waste shipments.

1.) All incoming shipments must be accepted by designated hazardous waste unloader.

2.) The sample and manifest of shipment is brought to lab.

3.) The Hazardous Waste Analysis sheet is completed.

4.) The proper analysis are run with results entered on WA sheet.

5.) The supervisor is consulted for the disposition.

6.) The disposition is entered on WA sheet, and manifest TSDF copy. The two sheets are attached together and filed for future reference.

C-2f Flash Point is the parameter used to analyze for ignitability

ACS treats and stores ignitable wastes. Ignitability is measured by test method T4, ASTM D93 (Method #1010, SW 846). The areas of the facility that treat and store these wastes are separated and protected from ignition sources. Proper process equipment and pumping equipment is used at all times. No smoking signs are conspicuously place in and around all process and storage areas.

ACS is not permitted to and does not accept reactive or corrosive wastes as defined in 40CFR, 261.22, 261.23 or 320 IAC, 4.1-5-3, 4.1-5-4.

The generators of wastes accepted at ACS are required to certify that they do not send material that is defined as reactive or corrosive.

ACS does not accept hazardous wastes that are incompatable with the storage tanks, equipment or other wastes stored at this facility. Compatibility of wastes is assured using test method T10 (ACS test). Also years of handling these and similar waste streams aid in determining the ability, to treat, blend and store these wastes.

HAZARDOUS WASTE GENERATOR SURVEY

GENERATOR AUDIT SHEET

Company Name _____

Address _____

Telephone _____

Contact _____

EPA ID # _____

(A) Characterization of Waste Generating Process
1.) Types and quantities of raw materials used:

_____
_____
_____

2.) Process Information:

_____
_____
_____

(B) Characterization of Waste
1.) Rate of Production: _____

2.) Storage time onsite: _____ Days

3.) Method of waste shipment: _____ Drums _____ Bulk

4.) Previous history of waste handling:

_____
_____
_____
_____

(C) Characterization of other influencing factors at plant.
1.) Other sources of waste which could be mixed:

_____
_____

2.) Current practices to avoid cross contamination:

_____
_____
_____
_____

AMERICAN CHEMICAL SERVICE, INC. IND 016360265

HAZARDOUS WASTE GENERATOR SURVEY

ANALYTICAL DATA SUPPLIED BY GENERATOR

Company Name _____

Address _____

EPA ID # _____

Waste Description

Chemical Composition - Account for 100% incl. water:

_____% _____%

_____% _____%

_____% _____%

_____% _____%

_____% _____%

_____% _____%

pH _____ Less than 5

_____ More than 5 - less than 9

_____ More than 9

Flash Point _____ (Pensky-Martens Closed Cup)

Specific Gravity _____

AMERICAN CHEMICAL SERVICE, INC. INDQ16360265

HAZARDOUS WASTE GENERATOR SURVEY

PRESHIPMENT SAMPLE ANALYSIS

Company Name _____

Address _____

EPA ID # _____

Waste Description

EPA Hazardous Waste No. _____

T-1	BTU/LB	_____
T-2	% Chloride	_____
T-3	Sp. Gravity	_____
T-4	Flash Point	_____
T-5	Distillation Range	_____
	% Yield	_____
T-6	Viscosity	_____
T-7	Solids	_____
T-8	pH	_____
T-9	Select Organics	_____
T-10	Compatability	_____
T-11	Acid Solubility	_____

Comments:

_____

_____

_____

_____

AMERICAN CHEMICAL SERVICE INC. IND 016360265

HAZARDOUS WASTE GENERATOR SURVEY

GENERATOR CERTIFICATION

Generator expressly warrants that the waste is not corrosive, reactive or toxic as defined in 40CFR, 261.22, 261.23 & 261.24. Also, that none of the following are contained in waste shipments:

Radioactive materials

PCB

Insecticides

Fungicides

Rodenticides

Mercaptans

Organic Cyanides

Herbicides

Dioxins

Generator warrants that sample submitted for analysis is representative of waste stream; that generator will notify American Chemical Service, Inc. of any change in processes that will affect waste stream.

_____

Company Name

_____

Signature

_____

Title Date

30 JUN 86